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EXAMINER SPOONER, LAMONT M				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/506,617

Applicant(s)

CASCINI, GAETANO

Examiner

LAMONT M. SPOONER

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

/Patrick N. Edouard/

Supervisory Patent Examiner, Art Unit 2626 DETAILED ACTION

Introduction

1. This office action is in response to applicant's preliminary amendment filed 10/18/04. Claims 32-62 are currently pending and have been examined. Applicant's IDS filed 9/13/04 has been considered. The claim to foreign priority, 3/14/02, has been acknowledged.

Specification

2. The disclosure is objected to because of the following informalities: The specification does not properly label the appropriate sections, for example, the Brief Description of Drawings, see MPEP 608.01(a). Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 53-59 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. More specifically, claim 53 is directing towards a "post Processing Module" or a computer program per se, without any physical embodiment. Therefore the claim is

considered nonstatutory wherein, a computer readable medium encoded with a computer program that performs a function, by the Interim Guidelines, p.53, discusses the proper embodiment of a computer program.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 32-52, 60 and 61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In **claim 32** (and claim 46, as claim 46 is according to the method of claim 32), step (d), "detail/abstraction level" is confusing. The Examiner is unable to determine whether there is a level for detail, another level for abstraction, or a level which combines detail and abstraction respectively.

In **claim 32** (and **claim 46**, as claim 46 contains the similar issue as explained below according to the method of claim 32), steps (f) and (g), the Examiner notes, "(f) identifying all secondary products of the examined text; and (g) among the identified secondary products, identifying a main product

of the examined text." is unclear and confusing. Wherein, from a closed set of all secondary products, how a "main product" can be identified from "among" the identified secondary products. The examiner notes, a bicycle can be identified with respect to related items, wheels, handlebar, frame, etc. However, the Examiner is unaware how from a closed set, (wheels, handlebar, frame, etc. - -not to include the main product, bicycle which is not interpreted as a "secondary product"- -)-interpreted as all the **secondary products**, the product bicycle can be identified among these three secondary items.

Claims 44 and 45 expound upon claim 32 steps (f) and (g) and is thus determined confusing and unclear as well.

As per **claim 34**, in step (b5), "among all candidate components, the candidate components being Tools and Artifacts that survived the filtering phrase, removing noun repetitions, also taking into account synonyms of candidate components", the Examiner notes that the "all candidate components" includes all candidate components, the Examiner is unsure of how the applicant intends to claim the "all candidate components" to be surviving components, unless phrased similar to, "among all surviving

filtered candidate components", wherein there are also in step (b4) a further set of candidate components.

As per **claim 43**, in step (f2) "a secondary product loses this property" is very confusing, wherein the Examiner is unaware of how the product loses a property.

As per **claim 62**, "A system according to claim 46, configured to customize systems of:

Components Recognition Module, Component Classification Module and Interactions Analysis Module activities are configured to be followed step by step by a user, ..." is not clear, concise and definite. The limitation appears to be an incoherent fragment.

7. Claim 55 recites the limitation "the Products Identification Sub-Module" in lines 6 and 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 32, 39, 46, 49, 53, 55, 57, and 62 rejected under 35

U.S.C. 102(e) as being anticipated by Rivette (6,499,026).

As per **claim 32**, Rivette teaches a method for performing automatic analyses and comparisons of patents and technical descriptions of engineering systems, based on classifying functions to associated subsystems and sub-functions and functional elements to associated physical components, organizing data in different forms according to scope of the analysis, the method comprising:

(a) examining a text of a patent or technical description (abstract, Fig. 46, Fig. 47-input text);

(b) identifying system components described in the examined text (ibid-parsing of text for components, Fig. 22, 23);

(c) classifying a role of the identified system components in terms of an assembly, a part, and a portion (Fig. 22-his assembly subassembly and part, Fig. 23, Fig. 47);

(d) classifying the identified system components in a hierarchy in terms of detail/abstraction level (ibid, Fig. 22, Fig. 23);

(e) recognizing all functional links and interactions existing between the identified system components of the examined text (ibid, Fig. 22, Fig. 23—each link to each component);

(f) identifying all secondary products of the examined text (Fig. 22, Fig. 22, subassembly parts); and

(g) among the identified secondary products, identifying a main product of the examined text (Fig. 22, his bicycle from the secondary products).

As per **claim 39**, Rivette teach a method according to claim 32, further comprising (i) processing all components to identify a role of a component in an assembly described in a text according to:

(i1) assigning an attribute portion to all components whose name contains words describing a portion of a component (Fig. 12G item 1217, his BOM attributes, and levels, Fig. 22-his subassembly);

(i2) assigning an attribute assembly to all components having at least one subsystem that in the (i1) assigning has not been labeled as portion (ibid-his assembly);

(i3) assigning an attribute part to all components not labeled in the (il) assigning and (i2) assigning (ibid, his subassembly).

As per **claim 46**, Rivette teaches a system for performing automatic analyses and comparisons of patents and technical descriptions of engineering systems according to the method of claim 32, the system comprising:

- a Temporary Storage Database in which a text to be analyzed, entered by a user, is stored (Fig. 3 item 316, Fig. 6 item 316);

- a Database of Stop Words and Analog Words (Fig. 6 item 621, Fig. 9 item 304);

- a Text Analyser Module configured to process the text (Fig. 9 items 304 and 914);

- a Database of Extracted Information (Fig. 6 item 626);

- a Components Recognition Module configured to identify all system components described in the examined text, in case of a patent the components being the components of the invention (Fig. 6 items 621, 626);

- a Components Classification Module configured to order and classify the identified components; an Interactions Analysis Module configured to identify all functional links existing between the recognized components of

the examined system, the identified links being configured to be stored in the Database of Extracted Information (Fig. 22, Fig. 23A, 23B);

a Product Identification Sub-Module configured to identify all secondary products and among these a main product of the examined system (Fig. 23B his Antique car as the main product, and body and wheel as secondary products);

a Post Processing Module configured to supply the contents of the Database of Extracted Information to the user, the contents being organized in different forms as a function of a scope of the analysis (Fig. 24 BOM 1217x).

As per **claim 49**, Rivette teaches a system according to claim 46, further comprising means for transferring attributes as an assembly, part, or portion identifying the role of a component in the assembly described in the text, through data exchange formats (Fig. 3 items 308, 310, 304-his data exchange format, Fig. 22 his assembly, part and portion).

As per **claim 53**, Rivette teaches a post Processing Module of a system according to claim 46, wherein a Text Content Module represents:

each identified component of the system with its reference number and a representative name defined by the Components Recognition Module (Fig. 25 his BOM_ID);

each identified component or subject external to the system (Fig. 24 items external to the Bicycle);

a main product for internal/external components (Fig. 24 his Bicycle);

a detail level hierarchy determined by the Classification Module (Fig. 22-his assembly, subassembly part-hierarchy);

a functional interactions between the identified components according to results of the Interactions Analysis Module (Fig. 22 his links between components).

As per **claim 55**, Rivette teaches a post Processing Module of a system according to claim 53, wherein the Text Content Module configured to represent:

a list of components with their detail level DL and a corresponding supersystem (Fig. 22, each assembly, subassembly and part level, the assembly level the supersystem);

a list of secondary products as pairs Field-Artifact with their main product probability value MPPV (Fig. 24, his "bicycle frame" Fig. 53-his

drop down list score for a patent product, the top score as the main product probability value);

a list of partial probability values evaluated using the Products Identification Sub-Module (Fig. 24-his drop down score list, the secondary scores as the partial probabilities);

a list of functional interactions between the identified components (Fig. 24-his list of names, as the interactions components).

As per **claim 57**, Rivette teaches a post Processing Module of a system according to claim 53, configured to perform an analysis of peaks of the Detail Level (Fig. 22-his highest level of the hierarchy, and assembly) along a description of a system allowing the identification of a core and secondary peculiarities of the system itself (ibid, the core being the core, and subassembly and part, being the secondary peculiarities).

As per **claim 62**, Rivette teaches a system according to claim 46, configured to customize systems of:

Components Recognition Module (Fig. 22-His BOM identification), Component Classification Module (ibid, his BOM classified into Assembly, Subassembly, and Part) and Interactions Analysis Module activities are configured to be followed step by step by a user (ibid, wherein the links

detail the interactions, available to user), the user being able to compare extracted information with its source sentence (Fig. 45 his extract and load operation, from customer provided data, Fig. 46 items 4604 and 4606-his patent text file and comparison module);

a list of components are able to be specified by the user to focus the Interactions Analysis on (Fig. 22-his BOM), in order to extract just the corresponding functional sub-diagrams (ibid);

the search for Secondary Products and/or the Main product of the examined systems is able to be limited to the components external to those systems (Fig. 6 item 621, 638-his user defined databases for searching).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 34, 35, 40-42, 47, 48, 51, 52, 58, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rivette as applied to claim 32 above, and further in view of Tsourikov (US 6,167,370).

As per **claim 34**, Rivette teaches the method of claim 32, but lacks explicitly teaching wherein the (b) identifying the system components described in the examined text is performed with an assumption that the components interact as subjects and objects of a basic functional triad composed of: a Tool, a Field, and an Artifact, and the (b) identifying comprising:

(b1) extracting from each sentence a triad Tool-Field-Artifact TFA, from an XML document or by using a semantic processor;

(b2) filtering the triads TFA containing a list of verbs not significant from a functional point of view;

(b3) collecting Tools and the Artifacts that have survived the filtering;

(b4) optionally, adding a further set of candidate components by using commonly available techniques to identify words representative of a content of a text;

(b5) among all candidate components, the candidate components being Tools and Artifacts that survived the filtering phase, removing noun repetitions, also taking into account synonyms of candidate components.

However, Tsourikov teaches the above lacking limitations, (b1) extracting from each sentence a triad Tool-Field-Artifact TFA by using a

semantic processor (Fig. 2 item 10, his semantic processor system, and subject-action-object (SAO-as TFA, respectively), (b2) filtering the triads... (ibid, Fig. 2 items 20, 24-his keyword/phrase triad extraction and SAO filtering), (b3) collecting Tools and Artifacts ... (ibid, Fig. 24 his DB), optionally, (b4) adding a further set of candidate components... (fig. 2 item 28, Fig. 5 item 48, 52-synonym set an new SAO), among all components, the candidate components being Tools and Artifacts that survived the filtering phrase... (ibid, Fig. 2 items 16-30-his normalizer, filtering, new concepts, Fig. 5 item 20-his synonym DB). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's parsing of information with Tsourikov's SAO extraction and optimization, providing the benefit of an optimized and structured set of extracted information.

As per **claim 35**, Rivette teaches a method according to claim 32, and further teaches wherein a detail/abstraction comparison criteria is applied to classify system components according to:

analyzing descriptive locutions and/or specification expressions (Fig. 139 items 13902-seach expressions); assigning to a component preceding

a preposition a role of subsystem of a component following the same preposition (ibid, item 13908- his assign accessing object).

Rivette lacks explicitly teaching:

searching descriptive verbs taking into account all forms that these verbs can assume, also due to conjugation irregularities;

assuming that components preceding a descriptive verb are subsystems/ supersystems of components following the descriptive verb itself as a function of a meaning of such a verb; and

performing the analyzing, assigning, searching, and assuming taking into account all alternative denominations of each component.

However, Tsourikov teaches these lacking elements, searching descriptive verbs...assuming that components preceding a descriptive verb...performing the analyzing, assigning, searching... (Fig. 9-his verb grouping, Fig. 11, analyzing, determining subject preceding verb, and components following verb in SAO structure, and denominations of components). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's parsing with Tsourikov's structure analysis of a text, providing the benefit of utilizing a

formatted structure analysis system to determine key components for extraction and further use.

As per **claim 40**, Rivette teaches a method according to claim 32, but lacks teaching (i) identifying functional links existing between recognized components of the examined text according to:

(i1) searching for sequences of words containing names of two system components separated by a verb, excluding a triad component-verb-component so that the verb is not significant from a functional point of view ;

(i2) assuming components that precede and follow the verb as the Tool and the Artifact of the triad, as a function of a meaning and of an active/passive form of the verb itself;

(i3) searching for sequences of words containing at least one system component and a verb of the functionalities requested in a given field of application, these being significant verbs from a functional point of view;

(i4) assuming the component, referred to in the (i3) searching, as the component of the triad, as the function of the meaning and of the active/passive form of the verb itself.

However, Tsourikov teaches the lacking limitations, (i1) searching for sequences of words containing names of two system components separated by a verb (Fig. 12 SAO extraction), excluding a triad component-verb-component so that the verb is not significant from a functional point of view (Fig. 9-his "is isolated", Fig. 12 his isolated);

(i2) assuming components that precede and follow the verb as the Tool and the Artifact of the triad, as a function of a meaning and of an active/passive form of the verb itself (ibid-his verb grouping, Fig. 10-his known grouping);

(i3) searching for sequences of words containing at least one system component and a verb of the functionalities requested in a given field of application, these being significant verbs from a functional point of view (ibid-his isolate);

(i4) assuming the component, referred to in the (i3) searching, as the component of the triad, as the function of the meaning and of the active/passive form of the verb itself (ibid, Fig 9 his isolating, fig. 12 his isolate). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's parsing with Tsourikov's structure analysis of a text, providing the benefit of utilizing a

formatted structure analysis system to determine key components for extraction and further use.

As per **claim 41**, Rivette and Tsourikov make obvious a method according to claim 40, wherein an external system is identified, the external system being a Tool or an Artifact of a functional triad, so that it has not been recognized (Fig. 7-his source sentence as outside source sentence, Fig. 12-hsi SAO as the triad).

As pre **claim 42**, Rivette and Tsourikov make obvious a method according to claim 40, Tsourikov further teaches wherein a functional link is identified, so that the Tool is a component of the system and the pair Field-Artifact can be translated into a function, a search for the Artifact of such a function can be demanded to a user or performed by looking for a first identified component following a preposition typically associated to that pair Field-Artifact (Fig. 5-his source sentence comprising component and preposition, Tool and artifact pair, Fig. 12.-his SAO-functional link, Fig. 3 items 16-28 user request, SAO analysis).

As per **claim 47**, Rivette teaches a system according to claim 46, claim 47 sets forth the same limitations and claim elements as claim 34,

and is within the scope of claims 32 and 34 and are thus rejected under the same reasons and rationale as claims 32 and 34.

As per **claim 48**, Rivette teaches a system according to claim 46, but lacks explicitly teaching a semantic processor configured to identify functional links existing between the recognized components of the examined system, the semantic processor configured to extract from each sentence a triad Tool-Field-Artifact TFA and comprising: means for, if both Tool and Artifact are system components and the Field is not belonging to a set of the Stop Words and Analog Words Database that contains a list of verbs not significant from a functional point of view, assuming the triad TFA as a basic functional block of the system; means for, if just one among the Tool and the Artifact is a system component, but the Field is a verb of the functionalities requested in a given field of application, assuming the missing Tool/Artifact as an External Component of the system and assuming the complete triad as a basic functional block of the system; means for, if a pair Field-Artifact among those extracted by the semantic processor belongs to a set of the Stop Words and Analog Words Database that contains a table of the pairs Field-Artifact, their translations in a functional verb and one or more prepositions typically associated to that

location, used to search the Artifact automatically, assuming the subject of the verb as the Tool of the triad and translating the pair Field-Artifact according to the table of the set of the Stop Words and Analog Words Database in a functional Field.

However, Tsourikov teaches means for, if both Tool and Artifact are system components and the Field is not belonging to a set of the Stop Words and Analog Words Database that contains a list of verbs not significant from a functional point of view, assuming the triad TFA as a basic functional block of the system (Fig. 2 item 20-his filtering, item 24-his SAO determination, once the Field passes the filter, the triad TFA or SAO is determined a function block, and utilized, S as the Tool and O as the Artifact);

means for, if just one among the Tool and the Artifact is a system component, but the Field is a verb of the functionalities requested in a given field of application, assuming the missing Tool/Artifact as an External Component of the system and assuming the complete triad as a basic functional block of the system (Fig. 7-his source, Fig. 9-his verb group, Fig. 13 his new SAO, C.5 lines 48-56, his Tool/subject is the missing component, yet assumed Tool/Artifact as external component);

means for, if a pair Field-Artifact among those extracted by the semantic processor belongs to a set of the Stop Words and Analog Words (Fig. 2 item 20 his filtering words) Database that contains a table of the pairs Field-Artifact, their translations in a functional verb and one or more prepositions typically associated to that locution (Fig. 20 item 24 his SAO determination as the translation in natural language sentence, i.e. preposition relating subject, verb to object, see C.5 lines 50-52-his natural language sentence), used to search the Artifact automatically, assuming the subject of the verb as the Tool of the triad and translating the pair Field-Artifact according to the table of the set of the Stop Words and Analog Words Database in a functional Field (C.6 lines 23-44-his SAO search request, utilizing the Artifact/object, subject/Tool as the functional Field, wherein the SAO have passed the filter of stop words, see above filter discussion). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's parser Tsourikov's semantic processor, providing the benefit of a well know Tool/Field/Artifact or SAO processor for determining an appropriate search structure.

As per **claim 51**, Rivette teaches a system according to claim 46, but lacks further comprising means for storing in the Database of Extracted Information all identified triads, and a position in the examined text of the sentence from where such a triad has been extracted. However, Tsourikov teaches means for storing in the Database of Extracted Information all identified triads, and a position in the examined text of the sentence from where such a triad has been extracted (Fig. 3 item 18-storing DB of SAO structures, Fig. 4 item 16-his position). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's with Tsourikov's parser for triad extraction, providing the benefit of SAO extraction and location for future display to a user.

As per **claim 52**, Rivette teaches a system according to claim 46, but lacks means for evaluating a position in the examined text of the sentence from where such a triad has been extracted, just numbering with a sequential order all sentences of the examined text, distinguishing a sentence from another based on a predetermined character or an ASCII character Carriage Return. However, Tsourikov teaches means for evaluating a position in the examined text of the sentence from where such a triad has been extracted, just numbering with a sequential order all

sentences of the examined text, distinguishing a sentence from another based on a predetermined character (Fig. 4 his text coder/tagging, SAO extractor (Fig. 11, his end of sentence tagging and distinguishing the sentence). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's with Tsourikov's parser for triad extraction, providing the benefit of SAO extraction and location for future display to a user.

As per **claim 58**, Rivette teaches a post Processing Module of a system according to claim 53, comprising a Database of Functional Usage of Components in Different Systems (Fig. 22, 23A, 23B, 25, -his components and links and hierarchy, Fig. 25 items 2502-2526-his Patent_BOM_ID as different systems), recording a reference to a source text and the role of the component (ibid-his reference by BOM_ID).

Rivette lacks storing all functional interactions associated to homonymous components in all examined texts, recording a reference to a source text and the role of the component in the triad TFA. However Tsourikov teaches storing all functional interactions associated to homonymous components in all examined texts (Fig. 4 item 44-his dictionary database and idiom/word codes-his idioms as the homonyms),

recording a reference to a source text and the role of the component in the triad TFA (Fig. 10-the numeric reference, 1,2,3,4-to the component and role of the TFA, or his SAO). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's with Tsourikov's parser for triad extraction, providing the benefit of SAO extraction and location for future display to a user.

As per **claim 59**, Rivette teaches post Processing Module of a system according to claim 53, but lacks a Database of Components Capable of Performing a Given Function configured to store:

all Tools associated with homonymous Fields found in all examined texts, recording a reference to a source text and a complete triad TFA; all Tools associated with homonymous pairs Fields-Artifacts found in all examined texts, recording the reference to the source text and the complete triad TFA.

However, Tsourikov teaches a Database of Components Capable of Performing a Given Function configured to store (Fig. 2 item 18-his database of SAO structures):

all Tools associated with homonymous Fields found in all examined texts (see claim 58, homonymous discussion), recording a reference to a

source text and a complete triad TFA (Fig. 10-the numeric reference, 1,2,3,4-to the component and role of the TFA, or his SAO); all Tools associated with homonymous pairs Fields-Artifacts found in all examined texts, recording the reference to the source text and the complete triad TFA (ibid, wherein in Fig. 3-his displaying the reference to the user). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's with Tsourikov's parser for triad extraction, providing the benefit of SAO extraction and location for future display to a user.

12. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rivette in view of Tsourikov as applied to claim 36 above and further in view of Conklin (US 6,363,378).

As per **claim 36**, Rivette and Tsourikov make obvious claim 36, but lack explicitly teaching wherein a Detail Level DL is assigned to each component, said DL representing a maximum abstraction level by a $DL=0$, each subsystem being one level greater than the DL of a corresponding supersystem. However, Conklin teaches a Detail Level DL assigned to each component, said DL representing... (see C.7 lines 10-21), his distance between hierarchical categories (0, 1, 2, wherein the distance between the

a parent and child is one, from 0 to 1, 0 representing the maximum abstraction, the grandchild assigned a level of 2). Therefore at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify the combination of Tsourikov and Rivette's hierarchy with Conklin's semantic (as his abstraction) distance between levels in the hierarchy providing the benefit of a measured distance between meanings of components.

13. Claims 50 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rivette as applied to claim 46 above.

As per **claim 50**, Rivette makes obvious a system according to claim 46, further comprising means for linking attributes as an assembly, part, or portion identifying a role of a component in the assembly described in the text (see claim 1), and a Feature Tree of a Part model and/or to an Assembly Tree of an Assembly model, thereby integrating a conceptual model of a mechanical system to its embodiment (see Fig. 22, 23A, 23B) but lacks a geometric database of a CAD system as a direct link to a Feature Tree of a Part model and/or to an Assembly Tree of an Assembly model, thereby integrating a conceptual model of a mechanical system to its embodiment. However, it is well known in the art, at the time of the

invention, to one ordinarily skilled in the art that CAD (computer aided design) is used for conceptual design and layout of components (see standard definition, i.e. Wikipedia). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's Feature tree part model with CAD, providing the benefit of a well known computer aided design tool to integrate the components to a standard CAD form.

As per **claim 54**, Rivette teaches a text Content Module of a system according to claim 53, configured to represent:

each identified component of the system by a rectangle labelled with its reference number and a representative name defined by the Components Recognition Module (see claim 53);

a sequential number and the representative name defined by the Components Recognition Module (Fig. 24 his BOM_ID sequential numbers);

a main product by an ellipse labelled with a same criteria for internal/external components (Fig. 24-his bicycle from components below as the elliptical reference);

a detail level hierarchy determined by the Classification Module represented nesting the components at a deeper detail level inside the components at a more abstract level (Fig 22, his assembly subassembly and part, levels hierarchy and nesting);

a functional interactions between the identified components (Fig. 22-his links between components) being represented with arrows pointing from the Tool to the Artifact, labelled with the Field, according to the results of the Interactions Analysis Module. Rivette lacks teaching:

a functional interactions between the identified components being represented with arrows pointing from the Tool to the Artifact, labeled with the Field, according to the results of the Interactions Analysis Module.

However, Tsourikov teaches functional interactions between the identified components being represented with arrows pointing from the Tool to the Artifact, labelled with the Field, according to the results of the Interactions Analysis Module (Fig. 9-his arrows, Fig. 10-his arrows, Fig. 12-his SAO identified components). Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify Rivette's parsing of information with Tsourikov's SAO extraction and

optimization, providing the benefit of an optimized and structured set of extracted information.

Rivette and Tsourikov lack teaching each identified component or subject external to the system represented by a hexagon labeled with string EXT. However, labeling components, at the time of the invention would have been obvious to one ordinarily skilled in the art. Therefore, at the time of the invention, it would have been obvious to one ordinarily skilled in the art to modify the combination of Tsourikov with Rivette's components, by labeling his external components, providing the benefit of identifying his external components, with respect to his internal components.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Won et al. (US 7,054,856) teaches examining text of a patent or technical description, identifying components and identifying a main product of examined text.
- Szabo (US 2007/0156677) teaches database access system, examining text of a patent or technical description, identifying components and identifying a main product of examined text.

- Troyanova et al. (US 7,120,574) teaches synonym extension of search queries, SAO extraction and search of documents.
- Batchilio et al. (US 2002/0007267) teaches expanded search and display of SAO knowledge base information.
- Boguraev (US 5,799,268) teaches examining text of a patent or technical description, identifying components and identifying a main product of examined text.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAMONT M. SPOONER whose telephone number is (571)272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571/272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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